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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/682,138	10/09/2003	Pantas Sutardja	MP0314	1340

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EXAMINER	
SNIEZEK, ANDREW L	
ART UNIT	**PAPER NUMBER**
2651	

DATE MAILED: 03/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Office Action Summary	Application No. 10/682,138	Applicant(s) SUTARDJA ET AL.
	Examiner Andrew L. Sniezek	Art Unit 2651

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 12/9/05.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-9,12-27,30-45,48-63,66-81 and 84-120 is/are pending in the application.

4a) Of the above claim(s) 9,12-18,27,30-36,45,48-54,63,66-72,81 and 84-110 is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-8,19-26,37-44,55-62,73-80 and 111-120 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 09 December 2005 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings were received on 12/9/05. These drawings are acceptable to the examiner.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-8, 19-26, 37-44, 55-62, 73-80, 111-120 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicants admitted prior art (figure 3) in view of Moran et al..

Re claims 1, 9: figure 3 as described with respect to the written disclosure is directed to a circuit arrangement that is part of an apparatus used to adjust the positioning of a transducing head in a hard disk drive that includes a continuous time filter (CTF), an analog-to-digital converter (ADC) and a discrete Fourier transform (DFT) as set forth. Claim 1 additionally sets forth the use of a filter to attenuate harmonic frequencies which although not taught by the admitted prior art is taught by Moran et al. (see figures 15, 20, 24 along with corresponding disclosure, specifically column 30, lines 19-24) to adequately position a head along a centerline of a track. It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate such a feature as taught by Moran et al. into the arrangement of applicants admitted prior art to obtain a position error for locating a head with respect to track center taking into account harmonic variations. Claim 9, although written using means plus function language is deemed to set forth similar limitations as claim 1 and satisfied by combination of admitted prior art and Moran et al. as applied. Claims 37 and 55 written similar to claims 1 and 9 expand on the limitations by setting for a disk, transducer head, servo actuator and a communications channel. These features are inherent in the prior art arrangement of figure 3 when used in a hard disk drive (HDD) as discussed in pages 1-3 of the written disclosure. Method claim 73 is drawn to the method of using the corresponding apparatus claim 55. These limitations are deemed to correspond to the apparatus claim and are therefore rejected for the same reasons provided above.

Re claims 2, 20, 38, 56 and 74: See for example column 30, lines 63-67 where the SSW signal used to determine sampling of ADC is varied (Moran et al.). Such a feature would have been obviously incorporated into the arrangement of applicants admitted prior art to achieve a position error for locating a head with respect to track center taking into account harmonic variations

Re claims 4, 22, 40, 58 and 76: the down converting limitation is satisfied by downsampler (222) of Moran et al. Such a feature would have been obviously incorporated into the arrangement of applicants admitted prior art to achieve a position error for locating a head with respect to track center taking into account harmonic variations.

Re claims 5, 23, 41, 59, 77: The specifics of the DFT are deemed satisfied by the 4-Point DFT as taught by the admitted prior art.

Re claims 6, 24, 42, 60, 78: The specifics of the CTF is satisfied by CTF (302) of applicants admitted prior art.

Re claim 80: filter (220) of Moran et al. is a digital filter. Such a feature would have been obviously incorporated into the arrangement of applicants admitted prior art to achieve a position error for locating a head with respect to track center taking into account harmonic variations.

Re claim 79: Although in Moran et al. a digital filter is used, it is widely Known to replace digital filters with analog filters to achieve the same result. Official notice is herby given. It would have been obvious to one of ordinary skill in the art to make such filter replacement in Moran et al. depending upon a design criteria desired and to incorporated this arrangement in applicants admitted prior art to achieve a position error for locating a head with respect to track center taking into account harmonic variations.

Re claims 3, 21, 39, 57, 75: Although Moran et al. teaches to sample at a rate different than the channel frequency, at the claimed twice to first frequency is not disclosed. Such a variance between the sampling times as taught by Moran et al. and that of the claimed invention is deemed to be a matter of design choice depending upon which harmonics of the fundamental frequency is desired to eliminate. It would have been obvious to one of ordinary skill in the art to vary the sampling rate of Moran et al. among a variety of sampling rates including the claimed twice the channel frequency as claimed to eliminate which ever resonance desired. Furthermore, such a feature would have been obviously incorporated into the arrangement of applicants admitted prior art to achieve a position error for locating a head with respect to track center taking into account harmonic variations.

Re claims 7, 25, 43,61: The claimed band pass filter is deemed satisfied by the low pass filter (220) arrangement as taught by Moran et al. since the range of frequencies being passed has not been claimed. Clearly a low pass filter passes a "band" of frequencies. Furthermore, such a feature would have been obviously incorporated into the arrangement of applicants admitted prior art to achieve a position error for locating a head with respect to track center taking into account harmonic variations.

Re claims 8, 26, 44 and 62: Although in Moran et al. filter (220) is digital, it is widely known to replace digital filters with analog filters to achieve the same result. Official notice is herby given. It would have been obvious to one of ordinary skill in the art to make such filter replacement in Moran et al. depending upon a design criteria desired and to incorporated this arrangement in applicants admitted prior art to achieve a position error for locating a head with respect to track center taking into account harmonic variations.

Re claims 111-120: The claimed "substantially eliminates" limitations are deemed satisfied by the at least figures 28-31 along with column 38, lines 5-39. as taught by Moran.

Response to Arguments

5. Applicant's arguments filed 12/9/05 have been fully considered but they are not persuasive.

Applicant previously made an election without traverse. Applicant also indicates that he is in no way making a statement regarding patentability distinction, or lack thereof, among any of the species. Applicant is invited to indicate that each of the previous species listed are obvious variants of one another, at which time examiner will consider each specie. Alternatively, if generic independent claims are found to contain patentable subject matter, then applicant will be allowed te bring back in dependent form the claims directed to the various species. There is no nexus between a restriction requirement and whether claims are satisfied by art under 35 USC 102/103. Applicant states that Moran does not teach a CTF and a DFT or an attenuation of an earlier filtering and the provision of an analog signal. Contrary to applicant's statement Moran clearly teaches a CTF (128) and a DFT preformed by (210). Moran teaches filtering (202) of a previous filtered signal performed in CTF (128). Also, applicant states on page 18, lines 9/11 of the response that Moran does provide an arrangement and process that does produce an analog adjustment signal. No hindsight is being used by

Examiner in the combination of references; instead it is clear from Moran that the use of the filter as applied is to attenuate harmonics in the positioning of the head along a track. One of ordinary skill would incorporate this feature in applicants admitted prior art for similar reasons without looking to applicant own specification. Clearly the sampling rate has a direct impact on which harmonic frequency is desired to be attenuated. The modification of the prior art is deemed proper for reasons given. Also, applicant points out that Moran teaches the attenuation of harmonics, including the third harmonic in figures 28-31 and discussion at col. 38, lines 5-39 and although achieves some attenuation of the harmonics, this attenuation is not as successful as applicants. As claimed by the newly set forth claims 111-120 a substantial elimination of a harmonic is deemed satisfied by Moran's teaching of attenuation of harmonics.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew L. Sniezek whose telephone number is 571-272-7563. The examiner can normally be reached on Mon.-Fri..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Nguyen can be reached on 571-272-7579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Andrew L. Sniezek
Primary Examiner
Art Unit 2651

A.L.S.
2/16/06